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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,378	07/23/2003	Ian Robinson	NG(ST)-6400	2360
7590	02/15/2005		EXAMINER CHOE, HENRY	
Christopher P. Harris 1111 Leader Building 526 Superior Avenue Cleveland, OH 44114			ART UNIT 2817	PAPER NUMBER

DATE MAILED: 02/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/625,378

Applicant(s)

ROBINSON, IAN

Examiner

Henry K. Choe

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-20, 28 and 29 is/are allowed.
- 6) ☒ Claim(s) 1, 3, 12-14, 16, 17, 21, 25 and 27 is/are rejected.
- 7) ☒ Claim(s) 2, 4-11, 15, 22-24 and 26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/23/2003.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Objections***

Claims 13 and 14 are objected to because of the following informalities: the limitations recited in the claim 13 are exactly same as the limitations recited in the claim 14. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 12-14, 16, 17, 21, 25 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Kiko (Fig. 2).

Regarding claims 1 and 21, Kiko (Fig. 2) discloses an amplifier circuit comprising a power amplifier [(46) It should be noted that the element 46 includes a feedforward amplifier. See column 15, lines 14-17) which provides an amplified output signal associated with an input signal (80 or 84), and a cross cancellation component [(36) According to lines 4-7 of page 10 of specification, the digital cross cancellation component 11 can be a digital component, such as a field programmable gate array] which generates a digital reference signal (88) that is converted (38) to an analog signal and amplified (108 in Fig. 4F) and added (108 in Fig. 4F) to the amplifier output signal to

substantially reduced unwanted signals (the feedforward amplifier 108 of Fig. 4F in switch driver 46 amplifies and adds to the amplifier output signal to substantially reduced distortion signals).

Regarding claims 3 and 27, the cross cancellation component (36) which generates a precomputed digital signal (88) which is converted (38) to an analog signal.

Regarding claim 12, the amplification system (108 in Fig. 4F) being a linear amplification with nonlinear components amplifier.

Regarding claims 13 and 14, Kiko (Fig. 2) further including a feedback path (52, 56, 40) having an analog to digital converter (40) which converts the final output signal from the analog domain to the digital domain to provide a final digital output signal to the cross cancellation component (36).

Regarding claims 16 and 17, the limitations recited in the claims are intended use of the invention.

Regarding claim 25, the feedforward amplifier 108 in Fig. 4F has a capability to perform the claim 25 limitations since the claim 25 describes the conventional feedforward amplifier.

### ***Allowable Subject Matter***

Claims 2, 4-11, 15, 22-24 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Reasons for Allowance***

Claims 18-20, 28 and 29 are allowed.


The following is a statement of reasons for the indication of allowable subject matter: Regarding claim 18, the closest prior art of record, Kiko (Fig. 2) does not disclose the following limitations: the functional limitations of the reference path. Regarding claim 28, the closest prior art of record, Kiko (Fig. 2) does not disclose the following limitations: separating a sample of the output signal into a plurality of subband output signal and generating a plurality of subband reference signals.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Patent numbers (6,188,732; 6,774,834) are the feedforward amplifiers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henry Choe whose telephone number is (571) 272-1760.

  
**HENRY CHOE**  
**PRIMARY EXAMINER**

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